

APPENDIX

09/24/2001 10:01:43 AM

**Assembly of Image Guided Laptop Stands for KneeTrac CPTs,**

**Purpose** This document is a production procedure for the Knee Trac System to make sure that the system will be assembled as released.

The assembly has to be carried out by STRYKER LEIBINGER engineers only !

**Identification**

Project Name / - no.	KneeTrac 1.0 / #1647
End User / Hospital	
Option (Duracon or Scorpio)	
Part Number	
Serial Number	
Responsible for assembly (Print Name)	

**Appendices****Distributed to**☒ DHR☐ Other \_\_\_\_\_**Summary**

- ☐ OK The system is complete and was strictly assembled according to the Assembly Instructions. (page 4) All OK-fields were checked.
- ☐ OK (minor deviations) (deviations were listed on last page). These deviations wont cause any functional limitations or any hazards !
- ☐ NOT OK correct and complete assembly is not possible (Reasons were listed on last page).

**Approvals**  
(Responsible  
Engineer)

(Print Name)

(Signature)

(Date)

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# Assembly of Image Guided Laptop Stands for KneeTrac CPTs, Continued

## Part List

Collect serial numbers and check completeness and SEPARATE					
No	Description	Qty	Serial no / ID	OK ?	
				No	Yes
1	Laptop Stand w/ Modified Laptop tray	1		<input type="checkbox"/>	<input type="checkbox"/>
2	6000-500-28 IGT Localizer (includes power cord and null-modem cable)	1		<input type="checkbox"/>	<input type="checkbox"/>
3	6000-500-006 IGT Sensor Array (includes camera cable)	1		<input type="checkbox"/>	<input type="checkbox"/>
4	Dell Laptop CPU	1		<input type="checkbox"/>	<input type="checkbox"/>
5	Dell Port Replicator (includes power cord)	1		<input type="checkbox"/>	<input type="checkbox"/>
6	LCD Monitor (includes power cord, VGA cable)	1		<input type="checkbox"/>	<input type="checkbox"/>
7	Wiremold Power Strip (includes mounting brackets)	1		<input type="checkbox"/>	<input type="checkbox"/>
8	Isolation Transformer (includes mounting brackets and 230 V fuses)	1		<input type="checkbox"/>	<input type="checkbox"/>
9	Isolation Transformer Mounting Plate	1	N/A	<input type="checkbox"/>	<input type="checkbox"/>
10	6000-115-5 Universal Mount	2	N/A	<input type="checkbox"/>	<input type="checkbox"/>
11	6000-500-27 Mounting Plate (Sensor array)	1	N/A	<input type="checkbox"/>	<input type="checkbox"/>
12	6000-102-27 Mounting Plate (Monitor)	1	N/A	<input type="checkbox"/>	<input type="checkbox"/>
13	6000-115-155 Arm Assembly (Includes cable housing cover, 8 screws)	2	N/A	<input type="checkbox"/>	<input type="checkbox"/>
14	6000-115-157 Arm Channel (Monitor)	1	N/A	<input type="checkbox"/>	<input type="checkbox"/>
15	6000-115-216 Arm Channel (Sensor array)	1	N/A	<input type="checkbox"/>	<input type="checkbox"/>
16	Arm Bushing	2	N/A	<input type="checkbox"/>	<input type="checkbox"/>
17	0001-143-000 Screws (to fasten universal mount to mounting plate)	8	N/A	<input type="checkbox"/>	<input type="checkbox"/>

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FD0701-4254/650

# Assembly of Image Guided Laptop Stands for KneeTrac CPTs, Continued

## Part List (continued)

Nr	Description	#	Serial no / ID	OK ?	
				No	Yes
18	0002-106-000 Screws (to fasten monitor mounting assembly to monitor)	4	N/A	<input type="checkbox"/>	<input type="checkbox"/>
19	Reverse IEC320 adapter kit (for power strip to isolation transformer)	1	N/A	<input type="checkbox"/>	<input type="checkbox"/>
20	Image Guided Cart power cord	1	N/A	<input type="checkbox"/>	<input type="checkbox"/>
21	European plug adapter kit (for power cord to wall)	1	N/A	<input type="checkbox"/>	<input type="checkbox"/>
22	Ground wire w/ Ring Terminal Connectors	1		<input type="checkbox"/>	<input type="checkbox"/>
23	#10-32 x 1/2" Machine Screws	12		<input type="checkbox"/>	<input type="checkbox"/>
24	#10-32 Nuts	4		<input type="checkbox"/>	<input type="checkbox"/>
25	#10 Star Washers	21		<input type="checkbox"/>	<input type="checkbox"/>
<b>Software</b>					
26	GhostVersion: _____	1		<input type="checkbox"/>	<input type="checkbox"/>
27	KneeTrac -SW: _____	1		<input type="checkbox"/>	<input type="checkbox"/>
28	Printed User's Manual V1.0	1		<input type="checkbox"/>	<input type="checkbox"/>

<b>Smart Tools &amp; Navigational Hardware</b>					
No	Description		Qty	OK ?	
				No	Yes
1.	6003-011-000 KneeTrac Pointer	ID-no.: _____	1	<input type="checkbox"/>	<input type="checkbox"/>
2.	6003-005-000 Tibial / Pelvic Tracker	ID-no.: _____	1	<input type="checkbox"/>	<input type="checkbox"/>
3.	6003-010-000 Femoral Tracker	ID-no.: _____	1	<input type="checkbox"/>	<input type="checkbox"/>
4.	6003-025-000 Resection Plane Probe	PT-no.: _____	1	<input type="checkbox"/>	<input type="checkbox"/>
5.	6003-019-000 Trocar for Pins	PT-no.: _____	1	<input type="checkbox"/>	<input type="checkbox"/>
6.	6003-020-000 Sleeve with Handpiece	PT-no.: _____	1	<input type="checkbox"/>	<input type="checkbox"/>

100101-4254/660

# Assembly of Image Guided Laptop Stands for KneeTrac CPTs, Continued

## Part List (continued)

Scorpion Tools & Navigation Hardware				
7.	6002-015-000 T-Handle	PT-no.: _____	1	<input type="checkbox"/>
8.	6003-017-000 Femoral Pin	PT-no.: _____	1	<input type="checkbox"/>
9.	6003-018-000 Tibial Pin	PT-no.: _____	1	<input type="checkbox"/>
10.	6003-016-000 Pelvic Pin	PT-no.: _____	1	<input type="checkbox"/>
11.	6003-035-000 Container for Navigation Instrumentation		1	<input type="checkbox"/>

Scorpion Instrumentation (Option Sc)				
No	Description	Qty	OK ?	
			No	Yes
Sc 1.	8000-0313 Sc A/P Adjustable Sizer	1	<input type="checkbox"/>	<input type="checkbox"/>
Sc 2.	8002-0313 Sc Sizer Bushing, 3/13	1	<input type="checkbox"/>	<input type="checkbox"/>
Sc 3.	8002-0511 Sc Sizer Bushing, 5/11	1	<input type="checkbox"/>	<input type="checkbox"/>
Sc 4.	8002-0709 Sc Sizer Bushing, 7/9	1	<input type="checkbox"/>	<input type="checkbox"/>
Sc 5.	8003-0313 Scorpion Stylus	1	<input type="checkbox"/>	<input type="checkbox"/>
Sc 6.	7551-0000 Blade Runner	1	<input type="checkbox"/>	<input type="checkbox"/>
Sc 7.	8000-0000 Modular Handles	2	<input type="checkbox"/>	<input type="checkbox"/>

DataCart Instrumentation (Option Dc)				
No	Description	Qty	OK ?	
			No	Yes
Dc 1.	8000-1060 Dc A/P Adjustable Sizer	1	<input type="checkbox"/>	<input type="checkbox"/>
Dc 2.	8003-1060 Dc Stylus	1	<input type="checkbox"/>	<input type="checkbox"/>
Dc 3.	7551-0000 Blade Runner	1	<input type="checkbox"/>	<input type="checkbox"/>

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# Assembly of Image Guided Laptop Stands for KneeTrac CPTs, Continued

## Assembly Instructions

Step	Action	OK
0	<p>Universal Mount Rework for Localizer:</p> <ul style="list-style-type: none"> <li>- Write a Red and White to remove items from stock to rework.</li> <li>- Loosen the set screw that controls the tilting motion of the Universal Mount.</li> <li>- Press the pin out of the base of the Universal Mount.</li> <li>- Rotate the base 180° and re-insert the pin into the Universal Mount.</li> <li>- Tighten the set screw that controls the tilting motion.</li> <li>- Inspect the finish of the part to ensure that it is the same after the rework as it was before.</li> <li>- Write a Red and White to issue the items back to stock.</li> </ul>	
1	Lengthen the monitor power cord by 20'. (This will be done in Kulamazeo.)	
2	Modify the Image Guided cart power cord to use a 10-32-44 pin. (This will be done in Kulamazeo.)	
3	Cut the power strip cord down to 18" and add reverse 10-32-44 adapter. (This will be done in Kulamazeo.)	
4	Put together the Ground wire w/ Ring Terminal 1. (This will be done in Kulamazeo.)	
5	Tap 6 holes in the bottom of stand which will be used to fasten the isolation transformer mounting plate to the bottom of the laptop stand. Use a #21 drill bit with a 10-32-44. (This will be done in Kulamazeo.)	
6	Change the input fuses in the isolation transformer to 230 V (3,15A / 250V) operation. These fuses are included in the Isolation Transformer box in the bag with the instruction manual. Switch the label around so 230V is visible. Leave the output set at 115 V.	
7	Using four 0001-143-000 screws (Fastenal p/n 24209), fasten the camera mounting plate to the universal mount. Remove the IGT mounting plate from the back of the sensor array. Using the screws removed from the camera, fasten the new mounting assembly to the back of the camera.	

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# Assembly of Image Guided Laptop Stands for KneeTrac CPTs, Continued

## Assembly Instructions (continued)

Step	Action	OK
8	Using four 0001-143-000 (p/n 24209) screws, fasten the monitor mounting plate to the universal mount. Remove the plastic stand from the back of the monitor. Using four 0002-106-000 screws (Fastenal p/n QM2530020A20000), fasten the new mounting assembly to the back of the monitor.	
9	Thread the Modified Monitor power cord, Computer power cord, and the localizer null-modem cable through the pole from the base to the laptop tray.	
10	Set the port replicator on the laptop tray. Connect the localizer null-modem cable to com1 of the port replicator. Tighten screws to hold cable in place. Plug in the power cord to the back of port replicator.	
11	Set the localizer on the base, pushed to the far right side (looking from the front of stand). Connect the localizer null-modem cable to com1 on the back of the localizer. Tighten screws to hold cable in place.	
12	Loosen set screws near the two holes for the arms. Place the arm bushings into each of the holes. Put each of the arms into the bushings. Get arms positioned by rocking them back in forth until they fit into place. Tighten both sets of set screws.	
13	Place the camera assembly into the upper arm. Thread the camera cable through the pole from the opening at the top to the base. At the base end, plug the camera cable into the back of the localizer. Run the cable up the top arm and connect it to the back of the sensor array. Bundle the excess cable so that it can be stored in the top half of the pole. Make sure that there is just enough slack to accommodate the full range of motion of the camera.	
14	Install the cable housing cover over the lower half of the arm. Then, install the camera's Arm Channel over the top half of the arm using the four remaining screws from the Arm assembly. (These should cover one cable.)	

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## Assembly of Image Guided Laptop Stands for KneeTrac CPTs,, *Continued*

### Assembly Instructions (continued)

Step	Action	OK
15	Place the Monitor assembly into the lower arm. Plug the Modified Monitor Power Cord and the Monitor VGA Cable into the back of the monitor. Plug the other end of the Monitor VGA Cable into the back of the port replicator, and hand-tighten it down. Make sure there is just enough slack to accommodate the full range of motion of the monitor.	
16	Install the cable housing cover over the lower half of the arm. Then install the monitor's Arm Channel over the top half of the arm using the four remaining screws from the Arm assembly. (These should cover two cables).	
17	Remove the rubber feet from the Isolation Transformer. Then, install the included mounting brackets in place of the rubber feet. Fasten the brackets using the screws that were previously holding the rubber feet.	
18	Fasten the Isolation Transformer assembly to the Isolation Transformer Mounting plate. Line the holes in the mounting brackets up with the holes in the mounting plate. Orient the transformer so that the electrical outlets will be facing towards the rear of the stand. The vertical part of the mounting plate should be towards the middle of the stand. Fasten the transformer assembly to the mounting plate in four locations, at each location using one 10-32x1/2" machine screw (Fastenal p/n 29049), two #10 Star washers (Fastenal p/n 33735), and one 10-32 nut (Fastenal p/n 36030). Fasten so that the nut will ultimately be hidden between the mounting plate and the bottom of the stand.	

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## Assembly of Image Guided Laptop Stands for KneeTrac CPTs, Continued

### Assembly Instructions (continued)

Step	Action	OK
19	Using a file or sandpaper, remove the coating around the tapped hole on the bottom of the stand (for mounting the isolation transformer) where one end of the ground terminal will later be fastened. Looking from the rear of the stand, this location is the closest tapped hole on the right side.	
20	Fasten the mounting plate / transformer assembly to the bottom of the stand. The first place the assembly needs to be fastened is at the location of the ground terminal. Put a #10 star washer (p/n 33735) on a #10-32x1/2" machine screw (p/n 29049), then place this through the appropriate hole in the mounting plate. On the inner side of the mounting plate, place the ground terminal over the screw, and then put a #10 star washer (p/n 33735) over this. Finally, tighten this screw into the tapped hole around which the coating has been filed down. For each of the other 5 holes, fasten the mounting plate / transformer assembly to the stand using one #10-32x1/2 machine screw (p/n 29049) with one #10 star washer (p/n 33735).	
21	Fasten the other end of the ground wire to the isolation transformer screw that has the star washer on it and has the paint filed off. The ground terminal should be fastened between the screw head and the star washer.	
22	Fasten the power strip mounting brackets (included with the power strips) to the already-tapped holes in the top of the base, using two #10-32 x 1/2" machine screws (p/n 29049) and two #10 star washers (p/n 33735). These holes are on the left side of the base (when looking from the front of the stand). To make the brackets mount flush, one of the machine screws in the base must be removed. After fastening the brackets, slide the power strip onto the brackets so that the cord is facing the back. Plug the modified end of the power strip cord into one of the accessory power outlets on the back of the isolation transformer.	

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# **Assembly of Image Guided Laptop Stands for KneeTrac CPTs,** *Continued*

## **Assembly Instructions** *(continued)*

Step	Action	OK
23	Using two large pieces of double-sided tape, fasten the power bricks for the monitor power and the computer power to the left side of the localizer (when looking from the front of the stand) just in front of the power strip. Plug each of their power cords into the power strip. Then, plug the localizer power cord into the power strip. Using strong tape or wire ties, bundle together the excess cord and store on left side of localizer on top of the power strip.	
24	Using a file or sandpaper, grind away a small portion of the outer paint around each of the four holes in the base cover. Place a #10 star washer (p/n 33735) onto each of the machine screws (the screws that came with the stand), and then use these to fasten the base cover tightly to the base. (If the top does not go down easily, make sure that the localizer and the power strip are all the way to the back of the base and that the power bricks are as far back as they can go to the power strip.)	
25	Place the Dell Laptop CPU into the port replicator.	
26	Plug the modified Image Guided Power Cord into the back of the isolation transformer.	

## **Software Setup**

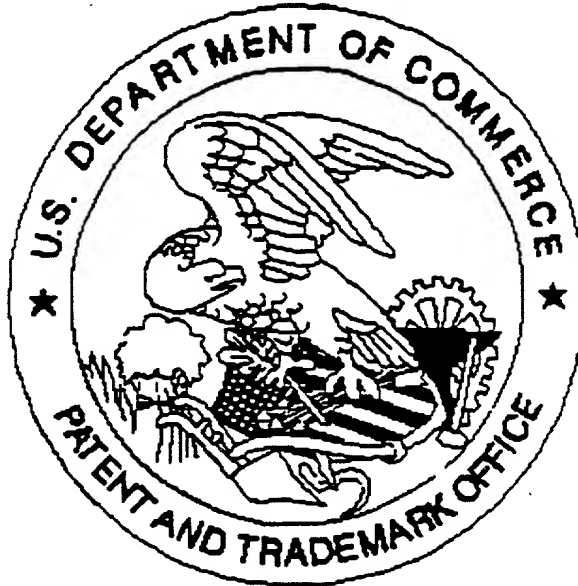
#	Action	OK
1	Install Software according the 'Installation Instruction' for Knee Trac	

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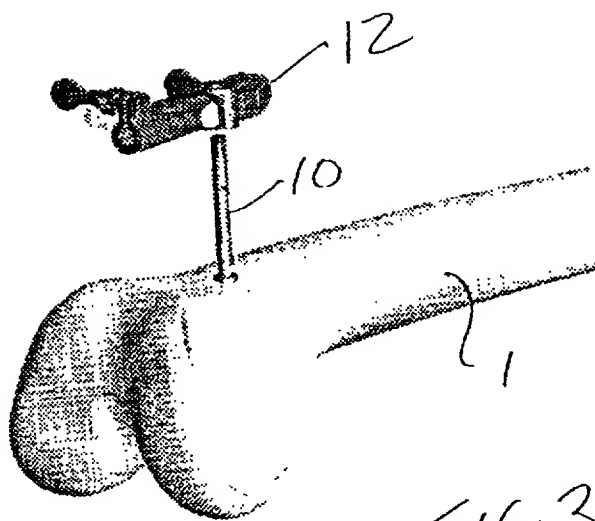


FIG 3

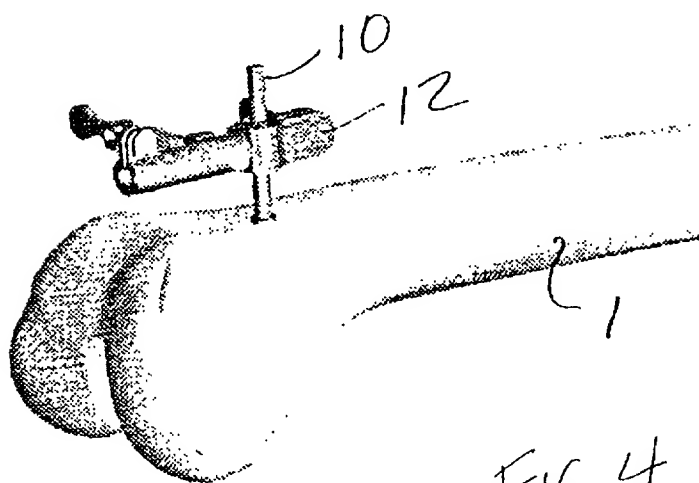


FIG 4

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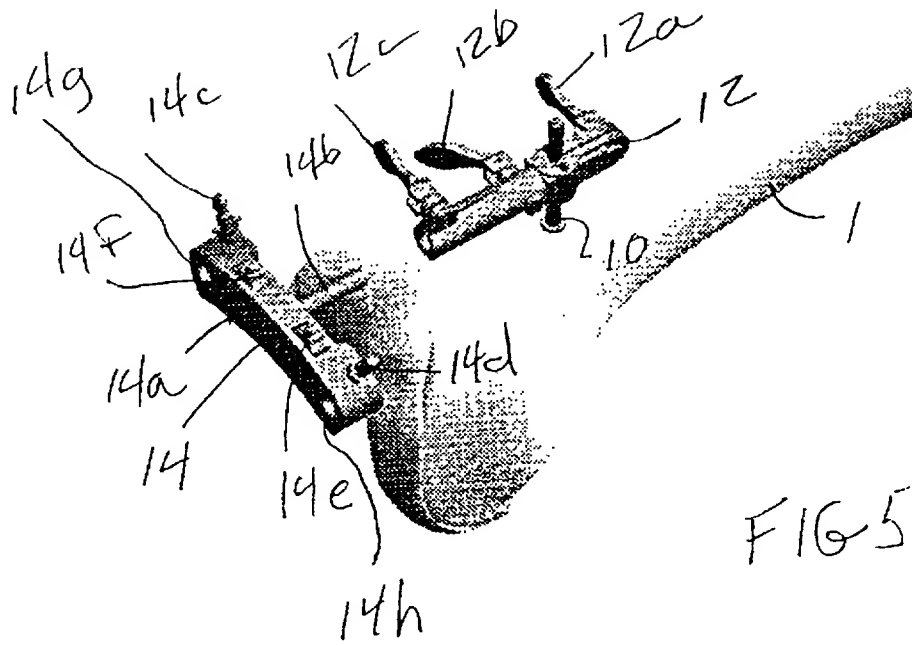


FIG 5